

REMARKS

Reconsideration of the application is requested.

Claims 39-58 are now in the application. Claims 39-58 are subject to examination. Claims 39-58 have been added. Claims 1-38 are canceled to facilitate prosecution of the instant application.

Under the heading "Claim Rejections – 35 USC § 101" on page 4 of the above-identified Office Action, claims 19, 23, 27, and 38 have been rejected under 35 U.S.C. § 101.

All of the previously presented claims have been canceled and new claims 39-58 have been presented. Applicants believe the new set of claims complies with the requirements of 35 U.S.C. § 101 as well as further distinguishes the invention from the prior art.

Applicants have focused the independent claims to routing/distributing the packet traffic according to the weightings and the related rules assigned to the nodes. In the new claim 58 (previously 38) applicants have defined an apparatus claim specifying a network node with its main building block as required to execute a method according to the method claims.

Support for the new claims can be found by referring to the previously presented claims. Support for the features in claim 39, which are not in claim

19, can be found by referring to paragraphs 2, 3, 5, 6, 8, 9, 21, 42, and 56-59 of the published application.

Support for the features in claim 39, which are not in claim 19, can be found by referring to paragraphs 2, 3, 5, 6, 8, 9, 21, 24, 42, and 56-59 of the published application. Claim 39 along with the supporting paragraphs of the published application are copied below.

Claim 39 (new): A method for routing data packets in a packet switching data network [0002] having network nodes, wherein in the data network:

data packets are transmitted from a transmitter to a receiver; [0005]

the data packets have destination addresses; [0003]

the data packets are routed by the network nodes according to the destination addresses; [0003] and [0021]

more than one path and consequently at least one alternative path to a destination is available in at least one network node; [0009], figs. 2 and 4 and [0042] and [0056] - [0059] and

successive packets or groups of packets are transmitted via different or multiple paths from the transmitter to the receiver in accordance with a defined traffic distribution which is determined by respectively assigned traffic distribution weightings; [0006]

the method comprising:

assigning a first and a second transmission path to a destination address; [claim 19]

including the first and the second transmission paths in a routing table of at least one network node of the data network, wherein the first and the second transmission paths have assigned traffic distribution weightings indicating a portion of the traffic load allocated to each transmission path; [claim 19] and [0008]

assigning a maximum traffic distribution weighting to the first transmission path; [claim 19]

assigning a minimum traffic distribution weighting to the second transmission path; [claim 19]

as long as the first transmission path and the second transmission path are both available, routing the data packets via the first transmission path; and [claim 19]

using links carrying the minimum traffic distribution weighting for the transmission of data packets only when a desired adjacent router or next hop towards the destination can no longer be reached by any other path. [0024]

Support for the features in claims 43 and 47, which are not in claims 23 and 27, can be found by referring to paragraphs 2, 3, 5, 6, 8, 9, 21, 24, 42, and 56-59 of the published application and to figs. 2 and 4. Claims 43 and 47 are not copied with the supporting paragraphs, but the form is evident by referring to claim 39 which is shown above.

Under the heading "Claim Rejections – 35 USC § 103" on page 6 of the above-identified Office Action, claims 19, 21-23, 25-27, and 29-38 have been rejected as being unpatentable over U.S. Publication No. 2003/0202476 to Billhartz et al. in view of U.S. Patent No. 6,141,319 to Dighe et al. under 35 U.S.C. § 103.

As suggested by the Examiner applicants have added features specifying the type of a connectionless, destination based, multipath routed packet switching data network to the independent claims. The method together with this type of network specifies the subject matter of the application in the framework of this type of network. In particular, applicants took the quote of paragraph [0006], lines 3 -7 and the quintessence of paragraph [0008] of the application into the claims. Applicants believe this sufficiently distinguishes the claimed approach from the connection oriented, call-by-call transmission capacity reserving approach of Dighe aiming at applications in e.g. ATM based networks. Applicants believe the claimed invention is distinguished from Dighe as well as Billhartz, who propagates a handshake-based deterministic route resource reservation scheme between the source and the destination nodes requiring the related connection state to be established in every intermediate node as well. Applicants approach is based on connectionless and stateless packet routing.

The invention as defined by new claims 39, 43, and 47 relates to a method for routing data packets. The invention as defined by new claim 58 relates to a system for routing data packets. A first transmission path is assigned a

maximum traffic distribution weighting, while another path is assigned a minimum traffic distribution weighting (e.g. zero). Nodes in the system turn to the path with the minimum traffic distribution weighting only when the adjacent router or next hop is no longer reached by any other path having a positive (e.g. greater than 0). Significantly, this helps to eliminate circulation of packets in the network. Moreover, the traffic distribution weighting is changed for the alternative path(s) in the event of failure of the primary link.

With regard to the previously presented claims, the Examiner stated that Billhartz discloses the claimed invention except for assigning the maximum traffic distribution weighting to the second transmission path in the event of the failure of the first transmission path. The Examiner alleges that Dighe discloses this feature. Applicant respectfully disagrees.

More specifically, the Examiner states that Dighe discloses an algorithm to find maximal network primary capacities and alternative routes for restoration under any single link failure (col. 6, lines 24 – 26). When the algorithm terminates, the result is a static capacity assignment for the network and a set of alternative routes for each link with related primary capacity  $p_{ij}$  and reserved capacity  $r_{ij}$ ,  $i, j = 1, 2, \dots, N$  for each link (col. 8, lines 40 – 44). Link capacities and their usage, however, are completely different from link weights, as link capacities describe limits of traffic loads that can be carried and are used, for example, for limiting traffic loads by admission control (ref. Dighe, col. 8, lines 64 – col. 9, line 10). Traffic distribution weightings, on the other hand, simply control the

distribution of packet traffic in terms of, for example, percentages of traffic taking one or the other way independent of the absolute amount of traffic (instant specification at paragraphs [0007] and [0008]).

Applying the results of Dighe implies the usage of path and bandwidth controlled, call and/or connection oriented routing (Dighe, col. 1 lines 5 – 12), whereas the claimed weight based traffic distribution is predestined (but not limited) to be used in a purely packet operated (and in most cases connectionless) network. Weights do not limit the traffic, but the capacities of Dighe do, - weights just control traffic distribution.

In contrast to the invention as defined by new claims 39, 43, 47 and 58, Dighe does not disclose traffic weights as required by the claimed invention. Even assuming *arguendo* that Dighe assigns something after finishing the algorithm, these are calculated capacities that are different and far from a maximum possible capacity since this would jeopardize the objective of near-optimal bandwidth assignment results as indicated in col. 3 lines 17 – 20 of Dighe.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 39, 43, 47, or 58. Claims 39, 43, 47, and 58 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 39, 43, or 47.

In view of the foregoing, reconsideration and allowance of claims 39-58 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Petition for extension is herewith made. The extension fee for response within a period of three months pursuant to Section 1.136(a) in the amount of \$1110.00 in accordance with Section 1.17 is enclosed herewith.

The fee for presenting one independent claim in excess of three was previously provided so no extra claim fee is due at this time.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Sterner LLP, No. 12-1099.

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Respectfully submitted,

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MPW:cgm

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